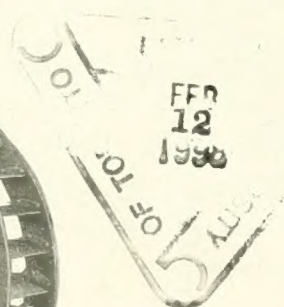
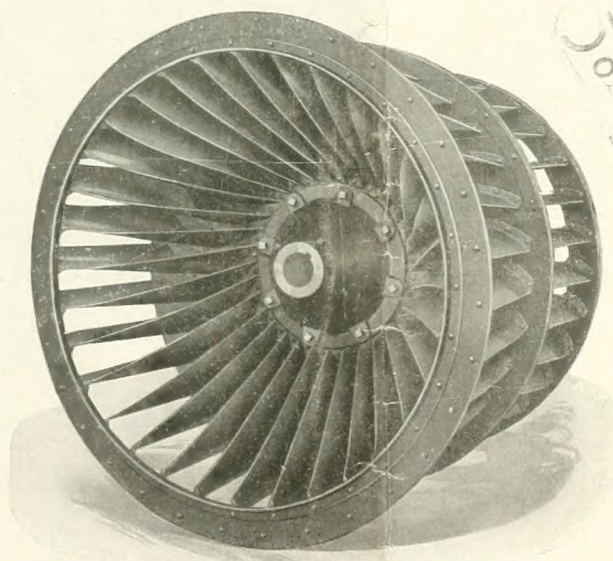


THE CANADIAN BUILDER

Published Monthly by The Commercial Press, Limited, 32 Colborne St., Toronto

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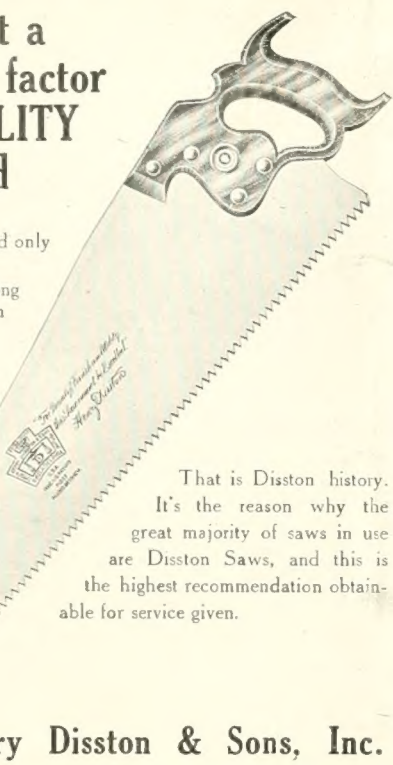
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PORT CREDIT BRICK

Send for samples
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of our brick



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Builders in using Port Credit Brick create a prestige and distinction with their customers.

Port Credit Brick make a building impervious to the elements.

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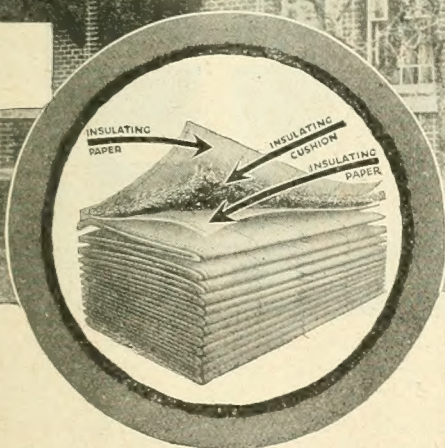
McKinnon Bldg.

TORONTO

Johns-Manville Keystone Hair Insulator



Residence of
A. H. Aldinger
Winnipeg, Can.
W. C. Rugh
Architect



Keystone Hair Insulator Saves You From Heating All Outdoors

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Dwellings
Garages
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Refrigerator Cars
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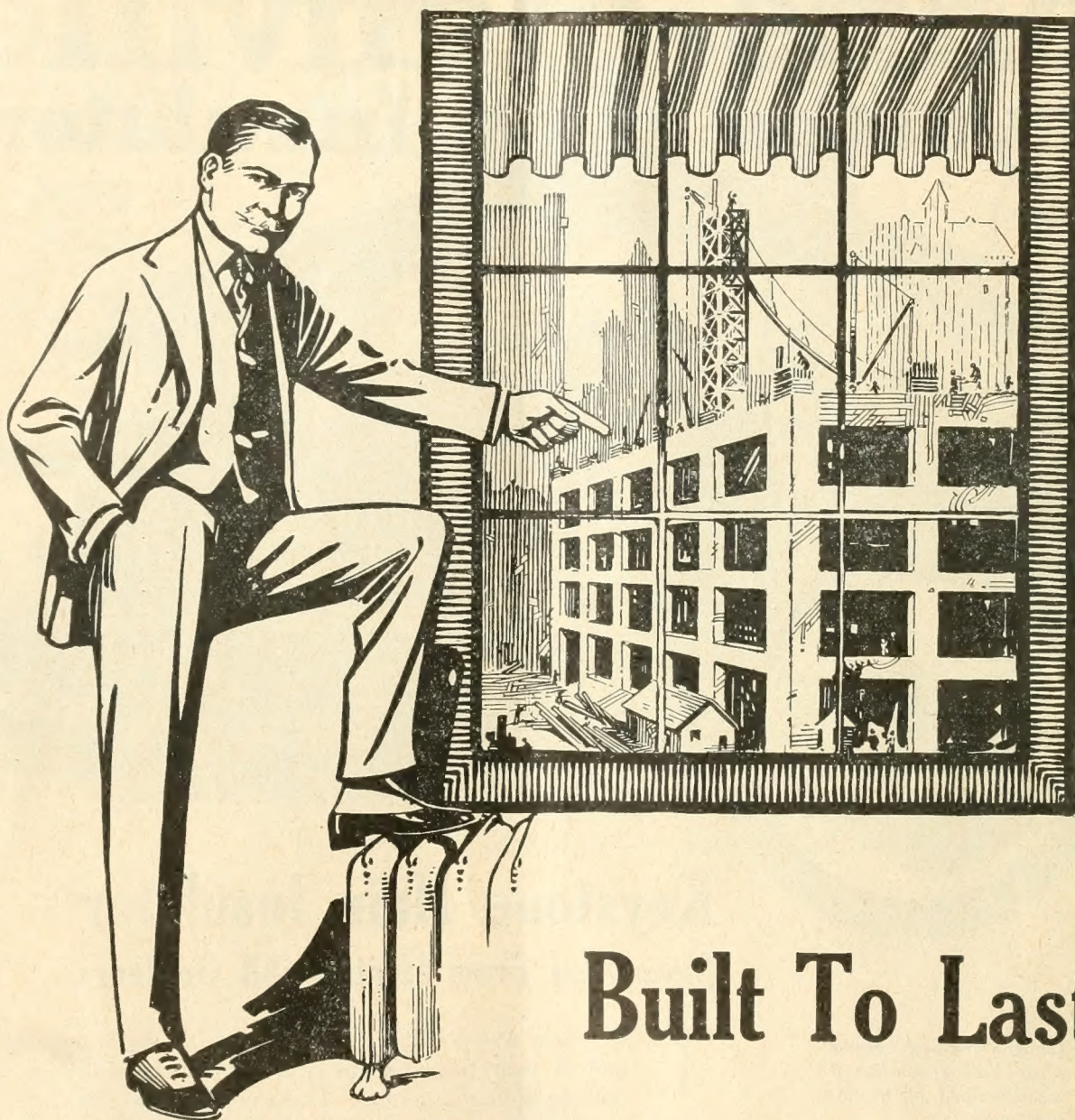
THAT heat which leaks out through the walls and roof of your house means coal burned but adds nothing to your comfort. This is a waste of fuel which is truly serious in the face of the present shortage, and the more culpable because it is so easily prevented.

By keeping all the heat from the coal you burn *in the house*, where it belongs, Keystone Hair Insulator will save enough coal quickly to pay for itself. And this effective insulation means not only a warmer house in winter, but a cooler one in summer, dry in every season, and quiet all the year round.

It is easily applied, sanitary, and will not carry flame. It makes your house more valuable—whether you want to live in it, rent it, or sell it.

The Canadian H. W. Johns-Manville Co., Limited

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Built To Last

THE special qualities of concrete construction that render it ideal for almost any type of building, recommend it especially for factory buildings and warehouses.

Reinforced concrete is fire-proof and permanent. Its first cost is low—its maintenance cost positively less than that of any other kind of building you can erect.

Send for out literature on buildings of this description. It will prove of interest.

CANADA CEMENT COMPANY, LIMITED

10 HERALD BUILDING, MONTREAL

CONCRETE FOR PERMANENCE

THE CANADIAN BUILDER

D. O. MCKINNON
GENERAL MANAGER

Published by The Commercial Press, Ltd., 32 Colborne St., Toronto, Ont.

G. C. KEITH, M.Sc.,
EDITOR

VOLUME 8

TORONTO, SEPTEMBER, 1918

NUMBER 9

A WAR-TIME REQUEST

To Our Subscribers:

About your subscription receipt:—Instead of sending you a receipt for your renewal subscription, we ask you to watch the expiry date on your next copy. By it you will see your remittance has been received—it will be advanced accordingly.

Thanking you, we are

Gratefully yours,

THE COMMERCIAL PRESS, LIMITED,
32 Colborne Street, Toronto.

After-the-War Lumber Trade

The appointment by the British Columbia Government of a special lumber commissioner for European

markets is an evidence of business acumen, and the selection of Mr. L. B. Beale, Assistant Forester, is a wise choice.

Mr. Beale was for some years B. C. Lumber Commissioner in Eastern Canada and prior to that had sixteen years practical experience among the bigger lumber interests in Great Britain. This, combined with his practical knowledge of B. C. woods, and the inside working conditions of the Forest Department of this province, should make him a valuable aid to building up a large and permanent business in Great Britain and European markets.

The war has changed many things. It has brought to Great Britain a realization of the valuable timber resources of this province and has inculcated a tendency to utilizing British Empire resources wherever possible. More lumber has been shipped from B. C. to Great Britain and France during the war than at any other time previous. The period immediately following the war, the period of reconstruction, will demand immense quantities of lumber for construction purposes, and therefore, the time was never more opportune to bring to the front in an efficient and forceful manner the facilities for trade offered by this province.

It is believed that the efforts of Mr. Beale as lumber commissioner will be backed in a co-operative manner by the principal lumber interests of B. C. and it is expected that a large and increasing business will result.

Mr. Beale leaves for London about the end of July and may be addressed at British Columbia House, Regent St., London, S.W.

Development of Initiative

In the conduct of the war it is the men who do things on their own initiative in the pinches who carry off the military medals. It is much the same with the salesmen in the business world. The laurels go to those men who do things on their own initiative occasionally without direction from the manager or proprietor.

Of course, there must be a head to direct the general work. The men under him must obey, but on occasion they must act on their own initiative.

Try the idea out on your own case. Many a time a man must act without direction. The man who acts right is the real thing. Keep your eyes on your men for instances of such initiative. It's what a man does—and does right—without being told, that proves his right to advancement. The advance on the Somme is a Big Brother to the advance on the payroll. On this basis, at least, war and business are much the same.

Adequate Insurance

A builder supply dealer asked if in view of the higher cost of the merchandise he carried in stock, he had protected his interests by carrying a little more fire insurance on the same. He replied that it was a matter that had never even entered his mind.

Is it possible that there are builders in the same position? If there are it is about time that they set their house in order in this respect.

Even if they have lumber, etc., in stock which cost less than the prices now obtaining, as is very likely to be the case, they should determine their insurance by the money they would have to pay for these goods to-day and not by the original outlay.

With market prices appreciating as they are to-day, he is an unwise builder who sails too close to the wind in regard to fire insurance.

Hold Your Victory Bonds

The Canadian who buys a Victory bond and forthwith sells it has performed only half a service for his country. To buy bonds and then sell them immediately tends to make the war burden of the country heavier instead of lighter, as it decreases the market value of the bonds. Victory bonds are the safest and soundest and one of the best investments in the world. To sell them unless imperatively required is not good business, is not good Canadianism.



Residence of Mr. H. Crosthwaite, Sherman Ave., Hamilton, Ont.

We Specialize in BUFF FLASHED BRICK

as used for this residence
and many others requiring

Permanent Construction
Distinctive and Attractive
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Interprovincial Pressed Brick

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Cabinet Style No. 95

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They cannot loosen in
the handle, in use or
abuse. You have
our guarantee.

No. 95
11 sizes

No. 90
14 sizes

They are as durable
as the high-grade steel
that composes them, and
will render faithful service for
generations. The comfortable
handle and various lengths of blades
make them suitable for all classes of work.

Your dealer can supply you

Let us send the "Yankee" Tool Book

NORTH BROS. MFG. CO., Philadelphia, Pa.

THE HOUSING PROBLEM *and* ITS SOLUTION

*Houses scarce in industrial centres—Plans to build
—Mr. Pearce's model house.*

REFERENCE has been made in several past issues of *The Canadian Builder* to the house shortage and methods of dealing with it. Already many municipalities have taken advantage or are planning to share in the benefits of the Ontario Government's loan policy which offers a solution. Many items have appeared in this paper showing the number of industrial concerns erecting houses for their employees. This scheme of meeting a serious situation is extending and already reaches across the continent.

In some places actual construction is well under way and a large number of houses will be completed this fall, though work was started very late. In other places discussion is going on while winter is approaching. Steps should be hurried if the outside work on quantities of houses, is to be completed, so the interiors can be finished in warm buildings.

Sudbury Council Interested

In order to get a size-up of the housing situation in Sudbury, in view of the offer of the Provincial Government to loan funds for the erection of houses, the council in an advertisement in the local paper asked any citizens who may be seeking housing accommodation to place their needs before Town Clerk W. J. Ross before September first. This request does not necessarily mean that the council will mete out assistance under the provincial housing plan, but is an effort to secure some tangible evidence of the demand for houses in Sudbury which will enable the council in establishing a policy. The council can deal with applications either singly or collectively.

In discussing the housing situation the council laid down the broad policy that the erection of buildings in localities where public utilities are not now installed would be discouraged. It would be sufficient, in the opinion of the council, to assist in the erection of a residence, without the further investment of carrying sewer, water, light and sidewalk accommodation to that residence or residences as the case might be. Building lots by the score were available in Sudbury adjoining all necessary public utilities.

Also a Housing Company Formed in Sudbury

Tentative proposals to take advantage of the Ontario Government's \$2,000,000 Housing Fund in Sudbury have been made, and with the information of the Sudbury Housing Association, Limited, plans are already under way. A charter was received recently by the new company, the incorporators of which are Messrs. D. L. Brown, J. H. Morin, James A. Mulligan, William Dickie and L. O'Connor. While nothing definite has yet been decided upon, the company has in mind building from twenty-five to fifty workmen's houses forthwith.

Houses for Halifax

The Canada Cement Company has received an order for cement sufficient to construct 1,000 concrete houses

which will be built to relieve the housing situation in Halifax.

Hamilton to Finance Building of Houses

A special meeting of the town planning committee was recently held in Hamilton, Ont., to discuss the housing situation. Representatives of the Manufacturers' Association, Board of Trade, Trades and Labor Council and the civic officials were present. The following proposition was made and is to be presented to the city council: "That the city finance any lot owner who has a clear deed to his property to the extent of \$2,000 for the purpose of erecting a dwelling. Such owners must place a cash guarantee of good faith in the hands of the city amounting to 20 per cent. of the gross expenditure on the building, and the city will build the homes at a much less cost than regular contract work."

Co-Operative Scheme in Guelph

Guelph, Ont., is going to have no further trouble over housing, if the thirty-one citizens who are forming the Guelph Home Builders' Association are successful in their efforts. It is a co-operative scheme, each member holding himself responsible for the building of one home for some working man. Each man will supervise the building of his own house. The material will be secured in large quantities and thus at a low price. Lots are obtained in different parts of the city, some by purchase and some as gifts. The working man will not likely have to pay more than \$100 for the land. The houses will be sold at \$100 down, the balance spread over ten years. Money is being advanced up to 75 per cent. of the value of the house through Mr. Dunbar, a barrister, of the city.

Workmen Want to Purchase Houses in Peterborough

A house-building committee in Peterboro, Ont., recently made a canvass of the city to ascertain how many workmen would be willing to purchase dwellings, if these were provided at a cost not to exceed \$2,500, including the lot. Ninety-seven workmen expressed themselves as favorable to the proposition.

Canadian Cotton Co. Ltd., Contract for Workmen's Homes

Recently the Canadian Cotton Co. closed a contract with Grant & Horne for the erection of four buildings 32 x 40 ft. each, to provide two self-contained houses. Each structure will be of two stories with a large veranda and porch on the front. They will be erected on a substantial concrete wall, and have ample cellar accommodation and steam heat. The ground floor will contain a living room 20 x 11, a dining room 12 x 12 ft., and a kitchen 9 x 8 ft. The second floor will have three large bedrooms, with accompanying wardrobes, and a bath. The finish will be hardwood throughout.

The Van Guilder system of houses, the first in this

section of the country, are to be constructed by Grant and Horne, each at a cost of \$8,000. This is known as the hollow wall, or thermos bottle house. They will be concrete structures, built without the usual concrete forms or blocks, but by a patent process. There will be the outside and inside walls with an intervening air space of two and a half inches to keep out cold and retain heat. Plaster is applied directly to the hollow wall.

The Company is also planning the erection of a residence for Mr. Kingsley, the treasurer.

The work is being carried on under the supervision of Frazer Bishop.

Toronto Civic Housing Committee Discuss Situation

The house shortage is being dealt with by a Civic Housing Committee in Toronto. Perhaps one of the best things they have done is to have the city architect prove to them by actual demonstration, that a brick house can be erected to-day for \$2,500. The plans show a good looking structure which could be erected on almost any street in Toronto.

Model Brick House

Plans and elevation as well as specifications of the \$2,500 house are shown herewith. The house is so designed that it can be built detached or semi-detached. The plans as shown are for a detached house, for which the \$2,500 figure provides. A semi-detached house would cost from \$100 to \$200 less.

The basement and first floor walls are to be built of brick, and the second floor walls are frame covered with shingles. The house has a frontage of 17½ feet and a depth of 28 feet. The first floor contains a living room in the front, with a combination dining-room and kitchen in the rear. Note the completeness of the kitchen arrangement. This room is small, but everything is very handy. There is a through hall to this room.

On the second floor are three bedrooms, two in the front and one behind with a three-piece bathroom to the side. There is a clothes closet for each bedroom, one off two of the bedrooms and another off the hall. The bedrooms are 7 by 13½, 9 by 10, and 9 by 12 feet 4 inches. The living room is 10 feet by 13½, and the combination 9 by 12.

There is a basement under the entire house, with a furnace in the centre and a coal bin in the front. Porches are provided for at the front and rear.

A Builders' Comments on this House

A practical builder makes the following comments on the design of this house:

"In looking carefully over the plans and specifications of the city architect's model house, as an experienced builder of residences in Toronto since 1870, I congratulate the designers on getting the maximum of comfort and usefulness at the minimum of outlay. The housewife's convenience and comfort have been in evidence at every turn, and each house with a small family could be run by any capable woman with the least steps, labor, and expense possible.

"The trouble with many builders of small houses has been in a great lack of closets and cupboards which are required by every tidy housekeeper, and the placing of doors and windows where they will save steps and give wall space for furniture. In the plans of this house, this has been well thought out. The pantry in the kitchen will be hailed as a great convenience and a very necessary addition to the kitchen. It adds to

the cost of the building by being a projection from the main structure, but it is money well spent. The rooms are small upstairs, but we are drifting that way even in many more pretentious houses, as help is scarce, and is likely to be scarcer. They are large enough for quite a family, if they care to live economically.

There is one suggestion I would make. It would cost a few dollars more. That is to render the walls of brick with a good coat of hair mortar from the cellar wall up to the plate where the frame top storey joins, making up to all openings, then fur out and plaster as specified and cover the outside walls of top storey with felt paper, carefully put on. For two reasons, the house would be so much warmer, and the walls that much stronger. I have built nine-inch walls, 40 feet high, for three storeys without a break and they are standing fine after 40 years, every way, and warmer than a 14-inch wall without the coat of plaster. The plan suggests the minimum of coal for heating, especially if return ducts to cold air box are made from every room. I have done that for many years and about 20 per cent. of coal can be saved, and rooms warmed quickly and comfortably.—John Lake.

✱ ✱

Portland Cement Association's Standard for Aggregates

Recommended practice for concrete bridge construction of the Portland Cement Association is covered in a recent booklet issued by the Association. The following paragraphs are of interest to crushed stone and gravel producers:

(a) Fine aggregate—Fine aggregate should consist of natural sand or screenings from hard, tough, crushed rock or pebbles, graded from fine to coarse, with the coarse particles predominating. Fine aggregate when dry should pass a screen having four (4) meshes to the linear inch. Not more than twenty-five (25) per cent. should pass a sieve having (50) meshes per linear inch, and not more than six (6) per cent should pass a sieve having one hundred (100) meshes per linear inch. Fine aggregate should not contain injurious vegetable or other organic matter, as indicated by the Colorimetric test, nor more than seven (7) per cent. by volume of clay or silt as determined by washing the sand thoroughly in one hundred (100) per cent. excess of water and allowing the silt to settle for one (1) hour. Field tests should be made by the engineer on the fine aggregate as delivered at different times during the progress of the work, and, if the above requirements regarding organic matter and silt are not fulfilled, the material represented by the samples should be rejected.

(b) Coarse aggregate—Coarse aggregate should consist of clean, durable crushed rock or pebbles graded in size, free from vegetable or other organic matter and should be practically free from soft, flat or elongated particles. The coarse aggregate should be well graded from 1½ inches down (1 inch for reinforced concrete), not more than five (5) per cent. passing a screen having four (4) meshes per linear inch.

The Alabastine Co. are erecting a double house of gypsum blocks near their works in Paris, Ont. So far as is known this is the first time the gypsum blocks have been used for this purpose in Canada.

Specifications—Materials and Cost of Model \$2500 House

*Designed by W. W. Pearse
City Architect, Toronto*

TO help solve the housing problem Mr. W. W. Pearse, City Architect, Toronto, undertook to design a house which could be built to-day for \$2,500. That he has succeeded in designing a well-appearing house which gives a maximum of convenience at a minimum of cost, everyone will enthusiastically agree. He has also prepared the following table of cost, the figures being obtained from authentic sources.

MASONRY

	Quantity	Rate	Total
Excavating and grading..	90 cu. yds.	.40	\$36.00
Building permit, water, etc.			5.00
Brickwork	19 M.	29.00	551.00
Basement floor (concrete)..	48 sq. yds.	1.00	48.00
Collars and clean outs.....			3.00
Cement sills	8	50	4.00
			\$647.00

(Or practically \$650.00).

CARPENTER

	Quantity	Rate	Total
Floor and ceiling joists (hemlock)	1462 ft. b.m.	\$55.00	\$80.41
Studs to walls and parti- tions	1800 ft. b.m.	55.00	99.00
Bridging, 2 x 2 in.	150 ft. run	.23 $\frac{3}{4}$	4.12
Strapping, 1 x 2 in.	720 ft. run	.2	14.40
Roof boards, wall boards, etc.	1900 ft. b.m.	65.00	123.50
Flooring (pine)	1000 ft. b.m.	70.00	70.00
Shingles	19 sq.	9.00	171.00
Building paper	20 sq.	.25	5.00
Front verandah and steps			35.00
Rear porch and steps			20.00
Coal bin			5.00
Window frames, sash and trim			70.00
Door frames, doors and trim			109.00
Shoe	320 ft. run	.8	25.60
Base	320 ft. run		
Basement and main stairs complete			50.00
Pantry cupboard			20.00
Cornice			27.50
Barges	100 ft. run	.12	12.00
Roll and wings	20 ft. run		2.50
Hardware and fixing same			60.00
Joist anchors			2.00
Drain board to sink			3.00
			\$1,009.03

(Or practically \$1,000.00).

PLASTERING

430 sq. yds. wood lathing and two coats of plaster..	430 sq. yd.	.42	\$180.60
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(Or practically \$180.00).

METAL WORK

	Quantity	Rate	Total
Gutter	75 ft. run	.30	\$22.50
Down pipe	22 ft. run	.25	5.50
Saddle and flash to chimney...	1		5.00
Flash against dormers.....	30 ft. run	.25	7.50
Down pipe from dormers	16 ft. run	.25	4.00
			\$44.50

(Or practically \$44.00).

PLUMBING AND GAS FITTING

1 bath	} price quoted by plumber	\$ 290.00
1 basin		
1 w.c.		
1 hot water tank		
1 kitchen sink ..		
1 street connection		40.00
		\$ 330.00

HOT AIR HEATING

Installed complete, price quoted by dealer.. \$ 140.00

PAINTING AND GLAZING

	Quantity	Rate	Total
Glass and glazing			\$20.00
Paint, barges, cornice, etc....	230 ft. run	.25	57.50
Verandah and porch floor and clearing			3.00
Window frames, sash and trim painted	20 sq. yds.	.30	6.00
Door frames, doors and trim stained	70 sq. yds.	.12	8.40
Base and shoe, stained	15 sq. yds.	.12	1.80
Paint, outside doors, etc.	5 sq. yds.	.30	1.50
Stain window trim	20 sq. yds.	.12	2.40
Paint cupboard			3.00
			\$103.60

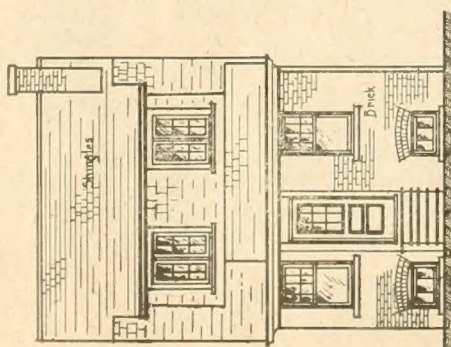
(Or practically \$100.00).

SUMMARY

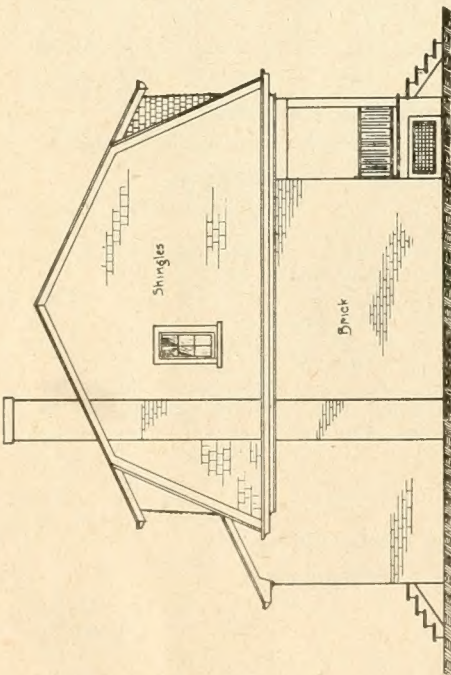
Mason	\$ 650.00
Carpenter	1,000.00
Metal	44.00
Plumbing	330.00
Hot air heating	140.00
Plastering	180.00
Painting	100.00
Electric wiring	45.00
Total	\$2,489.00

AN allowance was made for the mechanics who should do the work on the building to make a profit; there is no allowance made for any profit for a speculator. Allowance is made for a profit to the mechanics who have to do the building in all departments except that of carpentry, where the figures are on the actual cost of the material. Builders must take this into consideration when figuring selling price.

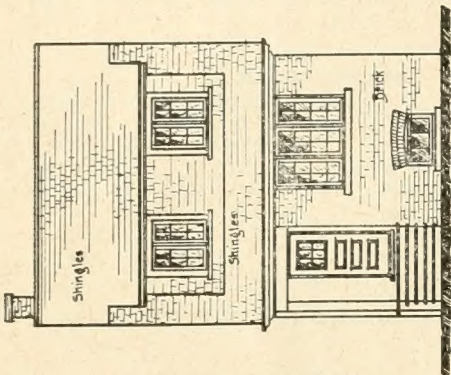
The varying prices of material in various places due to ease in obtaining them or vice versa, freight rates, etc., will affect the price, reducing it slightly, in some localities and increasing it in others. The figures given, however, are fair averages.



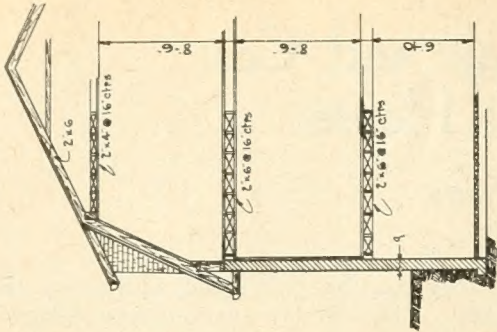
Rear elevation



Side elevation



Front elevation

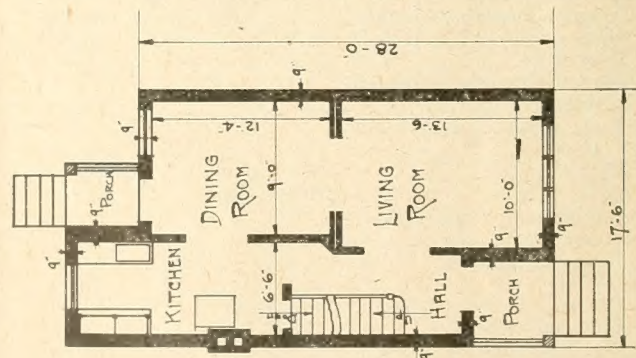


Sectional view

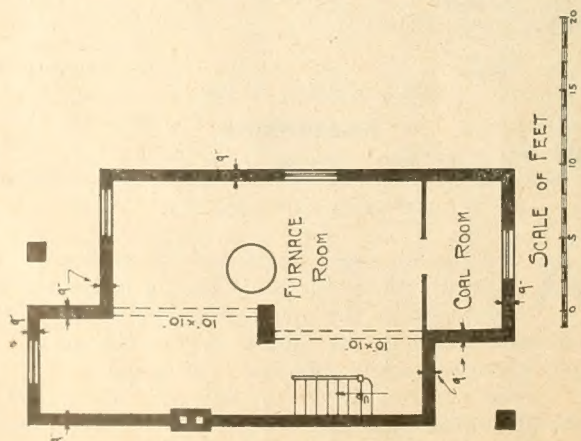
Model Brick House

Designed by
W. W. Pearce
 City Architect, Toronto

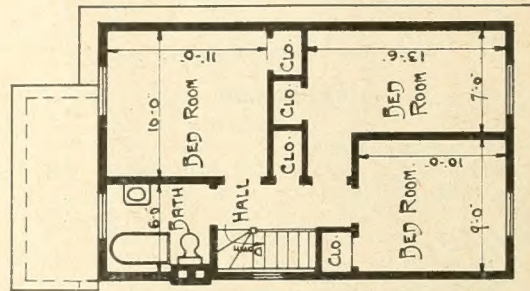
(Cost to build: \$2,500)



Ground floor



Basement



Bedroom floor

SCALE OF FEET
 0 5 10 15 20

Capacity of Silos

Professor L. W. Chase, of the Nebraska Agricultural Experiment Station, has been giving a great deal of study to the subject of silo capacity, with the result that he has worked out more dependable tables on silo capacity than have heretofore been used.

Practically all tables heretofore accepted have given capacities which were too high. For example, a 14 by 30-foot silo has commonly been rated at 91 tons. In fact, many people call such a silo a 100-ton one when in reality only about 80 tons are put into it as usually filled.

Commonly accepted tables have given the tonnage which a silo would hold if filled to full capacity with settled silage. In most cases it is not practicable for a man to add more silage to the silo after the material has settled thoroughly. The result is that he thinks the silo, as filled with unsettled silage, contains a tonnage which is not a true measure of the contents unless the silo is refilled after the first has thoroughly settled.

Capacities of Silos Based on Depth of Silage Immediately After Filling

Depth of Silage when Filling Stops	Inside Diameter of Silo in Feet				
	12	14	16	18	20
30 ft.	58.5	79.5	103.8	131.6	
32½ ft.	65.5	89.1	116.3	147.6	
35 ft.	72.5	99.1	129.3	163.9	202.2
37½ ft.	80.0	109.2	142.6	180.8	223.0
40 ft.	88.0	119.6	156.2	198.1	224.3
42½ ft.		130.4	170.1	215.6	265.9
45 ft.		140.0	184.2	233.6	288.0
47½ ft.			198.8	251.9	310.8
50 ft.			213.6	270.7	333.8

In figuring out the capacities shown in the accompanying table, Professor Chase assumes that the corn is in average condition, that the silo is filled in the usual way, the silage allowed to settle about 12 hours and the silo then refilled. The depth of silage shown in the table is that at the end of the second filling. This would usually be the full depth of the silo except where the roof prevents filling up to the eaves.

Silage varies considerably in weight, but the results of five years' weighing show that the figures in this table can be used for average conditions. It would be possible to put considerably more tonnage in a silo by filling it with very green corn or by filling it slowly, so some judgment must be used in applying any table or method of measuring to arrive at the probable contents.

If silo builders and manufacturers will adopt the above figures and methods in rating the capacity of their silos, stated capacities will be more dependable.

Building Increased Over Last Year

Despite the continued increase in the costs of material and labor, the returns of the Toronto City Architect's Department show that more building has been done so far this year than in the same months of last year. The total value of new buildings erected to the 1st of September this year was \$5,772,698, compared with \$4,938,583 for the first eight months of 1917.

The figures for the month of August are:

	1918	1917
Value of building	\$937,405	\$850,801
Number of erections	523	502
Number of permits	424	414

Concrete Aggregates

At the request of the Birmingham Slag Company, studies have been made by the United States Bureau of Standards of the value of crushed furnace and foundry slag screened between ¼ and 1½ inch as coarse aggregates, and slag sand all below ¼ inch screen as fine aggregate for use in concrete.

This report includes results up to 28 days for various proportions and different combinations of the crushed slag sand. Some tests in which Potomac river sand was used as the fine aggregate with the crushed slag as coarse aggregate were also made. For comparison a series was made in which the aggregates used were Potomac river sand and gravel.

The tests and condition of cylinders indicate that there is sufficient fine material in the slag sand to produce a mix of sufficient plasticity to handle properly in concrete work. Indications are that this may be corrected to a certain extent by increasing the ratio of the slag sand to the crushed slag aggregate, but not entirely obviated except in mixtures rich in cement. It would, therefore seem advisable where slag sand is used to add up to 15 per cent. of the weight of the cement of some material such as hydrated lime or fine sand.

The tests indicate that both the furnace slag and foundry slag are suitable for use as coarse aggregates in concrete. They are of equal or greater strength than the gravel tested in this investigation. The tests indicate that concrete containing foundry slag is somewhat stronger than concrete of similar proportions containing furnace slag as the coarse aggregate.

Six-months and year tests of most of the concrete mixtures will be reported as soon as completed.

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Protect the Concrete

During the past year several factories have installed concrete loading platforms and floors, more than 282 thousand square feet of platforms and 142 thousand square feet of floors being placed by these mills.

One of the chief causes of cracking in concrete surfaces is the presence of moisture in the surrounding atmosphere. In the warm months this moisture has no detrimental effect, but in winter time it collects in the tiny pores of the concrete and freezes. The freezing action with its concurrent expansion exerts a pressure on the surrounding concrete and causes tiny cracks to appear. These cracks in turn fill with moisture and the chipping action continues until spring comes with its higher temperature. This chipping and cracking of the surface of the concrete detracts both from the appearance and the strength of the concrete.

A sure way to prevent this destructive action is to thoroughly coat the surface of the concrete with a floor dressing paint. This coating preserves the texture and individuality of the concrete and prevents all moisture from penetrating the surface. If new concrete floors are covered with two coats of this paint and recoated at intervals of about six months, the concrete surface will remain unscarred and without cracks. The use of this "crack preventive" is becoming greater each year and many factories use it in large amounts.

Importance of Concrete Aggregate Specifications

No doubt most specifications owe their origin to the fact that definitions frequently fail to be sufficiently specific to prevent perversion of meaning. This must have been recognized when standard specifications for concrete construction were formulated; yet how frequently do we see such specifications disregarded in some minor part, yet one all-important fundamentally, with the outcome that the resulting concrete fails to come up to expectations. No one requirement of concrete construction seems to bear or to require more persistent hammering home than "the folly of bank-run material."

Engineers understand that a definitely specified mixture means one thing and nothing else. Those who are qualified to practice in the concrete construction field would not contend that a definite 1:2:4 mixture was expressed in counterpart by a 1:6 mixture, in which the six parts represented material from the natural run of a bank deposit.

Voids in aggregate vary within certain limits, which, however, are not great extremes. The principal variation in bank deposits is in the sand content, that is, in those particles which fall within the limits of standard specifications for sand, as regards size and grading of particles. Natural deposits almost invariably contain twice the required amount of sand for best concrete. Pits are often opened without proper stripping of overlying soil, which therefore drifts down the face and becomes mixed with material excavated for use as concrete aggregate. Screening and reportioning always pay in economy of cement necessary to secure the density and strength desired. Washing of aggregates is also sometimes necessary.

One need not travel far to examine natural deposits of material commonly used for concrete aggregates to observe the wide variation in sand and gravel contained.

Many contractors and foremen placed in responsible charge of superintending concrete construction for the engineer on a job, fail to realize that the specified mixtures are not, nor can they be, obtained by using the natural run of pit when proportioning concrete. Why this is impossible is perhaps as well disclosed by the accompanying views as could be explained in a volume of discussion. In one case the material seems to be all sand, in the other rock particles range up to almost boulders in size, in addition to there being an excess of sand. Both views show that the overlying soil was not stripped from the deposits before working them, hence this material must naturally drift down and become mixed with the concrete. The result of this is well illustrated in the bridge abutment, which shows disintegration of concrete, due entirely to the admixture of foreign material with which the cement could not bond.

Too often concrete failures are attributed to cement. The human element fails to recognize that a departure from specification requirements was the cause. Cements are more generally reliable than otherwise, and until those responsible for mixing and placing concrete can appreciate the fact that the human element is the most dangerous one, dissatisfaction will occasionally result from concrete construction in the future just as it has in the past.—H. Colin Campbell.

Some Kinks in Using Concrete

The principal things for which I have used concrete are chimneys, cisterns, floors, porches, foundations.

For mixing I find a common square shovel is the proper thing. Where a wet mixture is to be made a tight mortar box is very convenient to have, but for the ordinary mixture an old door with a 4x4 on edge for the sides makes a good place to mix.

For forms I have used board and plank, the boards being used later for sheathing and roofing. The joists for a building will make good forms for a foundation.

For the concrete chimney one can often use the wall of the house for one or two sides of the forms. I built a chimney on a thick concrete wall without any outside forms except those used for the walls, the inside form being of boards which were burned out. These should be thin so they will not make much of a fire.

I have used a tapered square wood form for the inside of the chimney.

Have seen a square wood form with the corners cut off and the sides filled out so as to make it almost eight sided. This was made so that by pulling on a wire it would collapse enough so it might be withdrawn.

I secured a block machine and made these blocks used for the foundation of a house, also the porches and steps.

A home made concrete brick mould may be used for the chimney. Take two pieces of 2 x 4's about forty inches long. On one side have grooves or notches one-fourth inch deep and the same in width. These are two and one-half inches apart, so that when partitions nine inches long of one-fourth inch stuff are put in them they make a space the size of a brick on edge. There is a piece across each end with two blocks nailed on to hold the sides together. This mold holds twelve bricks, and with extra partitions on hand one can make the brick quite rapidly.

One can also use a home made concrete mixer. The main part can be a barrel of two-inch maple staves with a cover which can be fastened on like a barrel churn. This revolves like a barrel churn. A frame of 2x6 stuff holds this up. The motive power is a gasoline engine and the belt runs on a tight and loose pulley connected to the large and small gear wheels from a two-horse tread power. Any two wheels might be used or one could use two wheels, large and small, and a chain belt. This home made mixer did good service on one summer's job. We ran some two earloads of cement through it. It was later used in mixing concrete for the foundations of two houses.

In laying tile, where a tight job is desired, one can use concrete to make the joints tight. When necessary to make a T or Y the tile may be cut and the joints made tight with concrete.

To fix a chimney top (new or repair) make it of concrete. This top can be made in a form on the ground or walk, or it can be built in place, which would seem the better way as it can be more firmly anchored in place then.

Use forms of thin stuff for the inside, but let the outside ones be inch lumber, and get it square with the rest of the work. Have your inside form a little the higher and then water will run to the outside, not down the inside. The facing mortar can be colored if desired though the natural color is not objectionable. —John Upton, in Building Age.

EQUIPMENT AND SUPPLIES ON EXHIBITION

*Machinery, fittings and supplies of interest to builders
shown at the Canadian National Exhibition.*

The Canadian National Exhibition appears to increase in size and interest each year. There is much to interest builders and at this time when building campaigns are being carried on in so many cities and towns, this is important. The following comments give an idea of some of the exhibits with some of their educative features.

Elliot Woodworker Co.—Mr. W. A. Elliot was on hand with a No. 5 Elliot Woodworker and a combination scroll saw and shaper. Their factory is located at 111 Adelaide St. W., Toronto, where a large number of machines are being constructed in anticipation of a big demand.

Recently sales have been made to the Imperial Munitions Board, Military Re-Construction Board of Hamilton, and Military Re-Construction Board, of London. These latter are for training returned soldiers in the use of woodworking machinery as applied to building operations, pattern-making and cabinet work. Other recent sales include such concerns as the Dominion Shipbuilding Co., Toronto, Sherwood Construction Co., Toronto; Frid Construction Co., Hamilton; and Frid Construction Co., Perth.

Mr. Elliot just sold two machines to the men who purchased the first completed Elliot woodworker eight years ago, Messrs. Weisemiller and McKenzie. A second machine was bought four years ago, and Mr. McKenzie is now making arrangements to purchase two more No. 5 machines. Messrs. Weisemiller and McKenzie are builders of high-class houses in Toronto, and have recognized the economies and labor-saving obtainable with these machines.

Van Guilder Building System—The Van Guilder Double Wall Co., 77 South Drive, Rochester, N.Y., were represented at the Exhibition by Horace J. Maughan, 382 Glenlake Ave., Toronto. They had a concrete wall built by the Van Guilder system, like a thermos bottle. The system is thus described by Mr. Maughan:

"We use a semi-wet mix, crystallizing all the cement and making the strongest possible concrete. For general construction our proportions are: 1 cement, 3 clean sharp sand, and 5 of gravel or crushed stone, ordinarily termed one-three-five. In many parts of the east we use the sand and gravel about as taken from the pit, simply raking out the stones over 2 inches in diameter and mixing it 1 cement to 6 of sand and gravel.

"This mix is tamped into the double wall chambers of the machine.

"When the machine is filled and tamped, we do not wait for the concrete to set, but raise the lever which releases the machines from every part of the concrete. We move the machine along immediately and fill it again. There is just sufficient water used so that by a little extra tamping you can bring a little water to the top; and when the machine is moved along, the sides of the wall will show wet. The two walls now molded are 9¼ inches in height and each is reinforced longitudinally

inally through the centre with a steel rod which extends around the entire building. Round galvanized cross ties are put in every two feet which tie the walls together. There are no joints, the walls are monolithic. It takes about two and one-half hours to work around an ordinary building."

Some of the work done around Toronto includes a complete residence for Col. Bickford, Stop 40, Kingston Road; 30 foundations for the Northcliff Land Developments, 7 basements for Miller & Sons, Lauder Ave., basement with cold storage and billiard room for E. H. Koker, High Park Blvd., as well as houses at Summerville, Dixie, etc.

Granite Concrete Block Co. Ltd., 832 Weston Road, Toronto—They had a wall constructed showing the granite face given the concrete blocks by the use of their blocks and system of making them. These blocks are made in steel truck moulds, thirty blocks being made in one operation. The blocks are made in the following standard sizes:

Plain concrete cellar blocks, 8 x 12 x 16. (Also ¼, ½ and ¾ sizes).

Plain concrete blocks for inside walls, 8 x 8 x 16. (Also ¼, ½ and ¾ sizes).

Granite concrete blocks, rock faced, 8 x 8 x 16 and 8 x 12 x 16. (Also ¼, ½ and ¾ sizes).

Granite concrete blocks, rock faced Ashler, 8 x 8 x 16 and 8 x 12 x 16.

Granite concrete blocks, smooth faced, 8 x 8 x 16 and 8 x 12 x 16. (Also ¼, ½ and ¾ sizes).

Headers, jambs, sills, etc., to suit all requirements.

Wetlauffer Bros., Toronto—They had a very extensive exhibit embracing fourteen different sizes of tilting and stationary drum concrete mixers. There were hand and power machines of various designs to suit different classes of work. A pocket edition of their catalogue gives descriptions of these machines and will be found worth perusing.

Art Stone Co., 272 Van Horne St., Toronto, had a very artistic exhibit including mantels in several designs, made of cement blocks.

Batts Limited, Toronto, showed a beautiful line of doors, door frames, pergolas, verandah posts, newel posts, etc.

Bishopric Wall Board Co., Ottawa, occupied one of the cottages in which the use of Bishopric wall board was demonstrated to advantage. It is used for partitions in houses, offices, etc., and is finding increased uses. The fact that it can be decorated to suit any color scheme is an important factor accounting for its use in many localities. The plaster board for exteriors permits the erection of a warm, economically constructed stucco house and many buildings have been erected using this method of construction with good results.

Brantford Roofing Co., Brantford, occupied an adjacent cottage where the various designs of Brantford roofing was on display.

R. Laidlaw Lumber Co., Toronto, had a display of hardwood in various finishes as well as model barns and garages of frame construction. The floor of the booth was finished in hardwood.

Metal Shingle and Siding Co., Preston—Buildings of metal construction were shown.

Milton Pressed Brick Co., Milton—Panels of "rug" and pressed brick in various shades.

Sturgeons Ltd., Toronto—This company handles solignum, a wood preservative and shingle stain made by Major & Co. Ltd., Hull, England; and Paripan, a liquid enamel in gloss and flat white and in colors, made by Randall Bros., England. The effects obtainable with these products were demonstrated. Other products handled by Sturgeons Ltd., were also on display.

Kaustine Co., Toronto—Sanitary closets for rural homes.

Watt Milling and Feed Co., Toronto Hardwood veneered doors of various designs.

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Rest Room Develops Latent Efficiency

The Mueller Mfg. Co. Limited, consider that a rest room is a great factor in developing the latent efficiency of those employed by them. With this idea in view they have erected fine buildings at Sarnia, Ont.; Port Huron, Mich., and Decatur, Ill.

In the accompanying illustration is shown the fine rest room for their employees just completed at Sarnia, Ont. This building is constructed of concrete and

stucco and is on the edge of the St. Clair River. It contains a spacious auditorium that will seat from four to five hundred people. A large balcony is provided for an orchestra.

A well-equipped kitchen and locker room accommodating three hundred people is part of the equipment.

The porch is of concrete entirely, and runs across the full length of the front of the building.

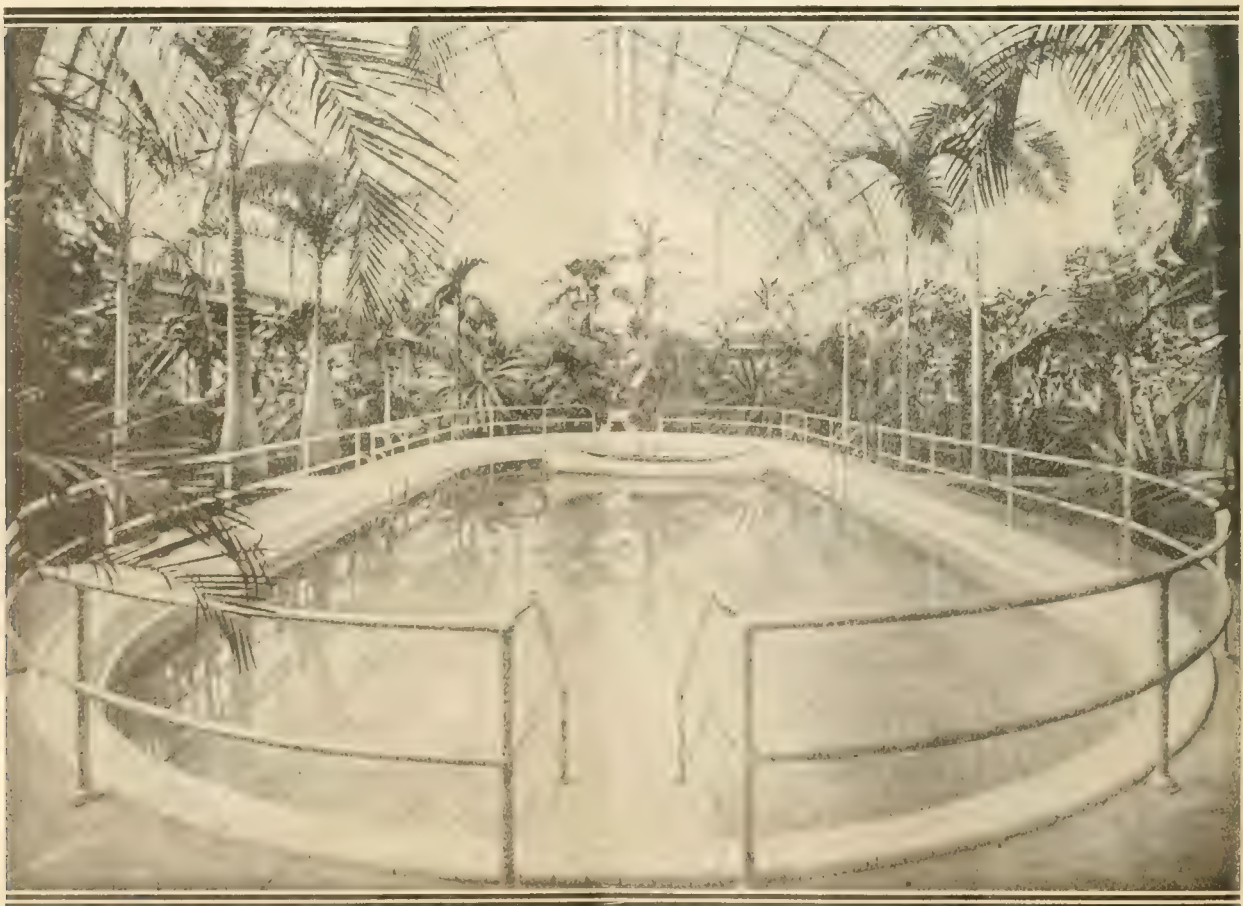


Rest room of the Mueller Mfg. Co., Sarnia

The hall will be used as a dining room for employees and for such entertainments as will be offered from time to time.

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Expanded metal offers a big field in the modernizing of homes at low cost. Used in conjunction with concrete spraying machines or "guns" this method of construction is very economical.



A palm garden pool in San Francisco, Cal.

BUILDING CONTRACTORS *to meet in* OTTAWA

A meeting of contractors and supply men from Ontario Builders' Exchanges and representatives of the Montreal Exchange met in the Toronto Builders Exchange on September 4, to discuss a Dominion organization and a meeting this fall. Those present were as follows:

Montreal—John Quinlan, J. P. Anglin, C. F. Willpiece, D. Trotter and J. D. Johnson.

Toronto—Herbert Elgie, G. Gander, R. Jackson, Walter Davidson, M. Lewis, H. N. Dancy, F. B. McFarren.

London—H. Hayman, Geo. Hayman, Geo. R. Hyatt, W. Hyme and T. R. Wright.

Galt—A. G. Robb.

Mr. Anglin outlined the organization work of the Montreal Exchange and stated that the Minister of Public Works was willing to meet a delegation to talk over various forms of contracting.

Mr. Jackson advocated a National organization. Mr. Jackson was made chairman and T. R. Wright secretary pro-tem of this organization conference. The conference was then sub-divided into general contractors and suppliers, who met separately and afterwards met together again to receive reports and recommendations.

Mr. Johnston and Mr. Smallpiece in presenting the report for the supply dealers showed that about 21 per cent. of the Toronto Exchange and 50 per cent. of the Montreal Exchange consisted of supply dealers who would also support a Dominion organization.

Mr. Gander for the sub-contractor, recommended that only members of local exchanges be allowed to join the new and larger organization, exception being made for contractors where no Exchanges exist. The relation of the sub-contractor to the general contractor should be discussed and an arrangement made whereby the general contractor using a sub-contractor's estimate in a tender should award the work to that sub-contractor if the contract is awarded the general contractor.

Mr. J. P. Anglin for the general contractors said he believed in a square deal for all and it was a question to be decided whether the general contractors should form a branch of a Dominion organization or be affiliated with it.

He thought that existing Exchanges should be centres of districts and contractors in nearby municipalities should join the nearest Exchange. His idea was that the meetings be held in sections, except the open meetings when such questions as housing, are taken up. It is expected that Mr. Thomas Adams will speak on housing standards advocating the co-operation of building contractors in deciding upon designs and carrying out plans for construction.

It was then decided to proceed with a conference at Ottawa and a meeting for organization purposes will be held in Ottawa, October 22, 23 and 24.

Proposed Ottawa Program

Among the subjects to be dealt with at this conference will be:

The further usefulness of the Exchanges;

Tendering, including quantity surveying, method of calling and opening bids; contract and bid bonds vs. cheques; contracts-standard agreements, prices, etc., plus fixed sum contract;

Labor: technical education.

Material, including resources, economy, readjustment, standardization.

Future business, including industrial housing, concrete roads, etc., concrete forming.

Business relations—public works, architects, engineers and owners; sub-contractors and supply houses; powers of superintendent or inspector and arbitration; foreign competition and plan making.

Building by-law and Lien Act discussions.

Relation to Board of Trade and Manufacturers' Associations.

Code of ethics to liens; general contractor and trade contractor—(1) receiving bids and awarding work; (2) payments; (3) bonds; (4) bonus and penalties.

Zones of operation, plant, yard, etc.

Trade papers and building suggestions.

Organization Committee Appointed

The following committee was appointed to arrange for the conference: J. P. Anglin, chairman, Montreal; David Trotter, secretary, Montreal; Mr. W. A. Mattice, Ottawa; J. D. Johnston, Montreal; W. Ramsay, Montreal; Henry Hayman, London; Herbert Elgie, Toronto; W. E. Dillon, Toronto; W. Davidson, Winnipeg; and H. Hazelton, Winnipeg. Messrs. Thos. Hooper, secretary of the Winnipeg Exchange is in favor of the conference and fifteen other Exchanges exclusive of Montreal, Toronto and Winnipeg, have already signified their intention of being represented. E. A. Sanders, secretary of the Mechanical Trades Association, Halifax, will be asked to co-operate.

The pre-conference of Eastern Exchanges concluded with a request by Messrs. Anglin and Wright, that readers of the Canadian trade papers send articles on subjects of interest to the trade for publication.

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Meeting of Provincial Builders and Supply Men

A meeting of the Provincial Builders' and Supply Association of Ontario, was held at the Builders' Exchange, Toronto, on September 3, with President Albert Tomlinson in the chair. Other officers present were, H. Elgie, vice-president, and T. R. Wright, secretary-treasurer, London. Most of the branches were represented.

A committee was appointed to draft proposed changes to the Lien laws and place them before Attorney General Lucas. Later, the committee waited on the Hon. Mr. Lucas, and asked that the Lien Act be changed to cover municipal work. The committee received a cordial reception and the promise that the points brought up would receive careful consideration.

The Compensation Board will be asked to furnish a list of all contractors doing business in each town and city where exchanges are located.

Price List of Building Materials—Revised to Date

EDITOR'S NOTE—Great care is exercised in obtaining prices for this department. They are as accurate as it is possible for us to make them. We know, however, that because of varying conditions, different dealers' prices are bound to vary somewhat; and our purpose in publishing this department is to give readers an idea of prices, rather than absolutely definite information.

PRICES AT MONTREAL

Hemlock lumber—		
2x4 in. to 2x12 in., 8 to 14 ft.	\$42.00	
2x4 in. to 2x12 in., 16 ft.	43.00	
2x4 in. to 2x12 in., 18 ft.	46.00	47.00
No. 1 hemlock decking	42.00	43.00
No. 2 hemlock dimensions and 1 in.	35.00	38.00
Pine—		
1 in. common and better pine 8 to 12 in. wide rough	55.00	75.00
2 in. white pine, mill stock	52.00	65.00
7/8 x 8 and 10 in. pine shelving	74.00	79.00
7/8 x 12 in. pine shelving	84.00	
No. 1 white pine flooring	57.00	64.00
No. 1 spruce flooring		54.00
No. 1 pine decking, D2S		62.00
No. 1 pine V or beaded sheeting	68.00	
No. 2 pine V or beaded sheeting	58.00	
Pine trim for paint finish—		
4 in. casing, per 100 ft.	3.50	
5 in. casing, per 100 ft.	4.00	
8 in. pine base, per 100 ft.	6.50	
10 in. pine base, per 100 ft.	8.50	
4 in. pine window stool, per 100 ft.	5.00	
Shingles, lath, roofing, etc.—		
No. 1 pine lath	7.00	
No. 2 pine lath	6.50	
No. 1 spruce lath	6.00	
XXX B.C. shingles	5.50	
Cedar posts—fence—		
5 in. at small end, per ft.	.40	
7 in. at small end, per ft.	.60	
Hardware—		
Nails, wire, common, base	5.50	
Nails, cut, common, base	5.70	
Sash weights, cast iron, per 100 lbs. (solid)	3.10	
Tarred felt paper, per roll	.75 to	1.25
Building paper, per roll	1.20	
Brick, tile, terra cotta, sewer pipe—		
No. 1 dry pressed red bricks	18.00	
No. 1 dry pressed buff bricks	21.00	
Red stock bricks	15.00 to	18.00
Cement brick, grey	12.00	
Wire brick	60.00	
Sewer pipe, 4 inch, per ft.	.15	
Sewer pipe, 6 inch, per ft.	.22½	
Cement, plaster, stone, etc.—		
Cement (bags extra) car lots, bbl.	3.10	
Sand, for cement or brick work, ton		
Lime, per ton	15.00	
Hydrated lime	20.00	
Mortar color, bbl.	6.50	
Plaster of paris, bbl.	3.15	
Crushed stone, 2 in.	1.75	
Crushed stone, 1 in.	2.00	
Crushed stone, 3/8 in.	2.25	
Hardwall plaster, per ton	17.00	
Gravel, per ton	1.20	
Hair (plaster) per lb.	.15	

PRICES AT TORONTO

Hemlock lumber (sized)—		
2x4 in. to 2x12 in., 12 to 14 ft.	\$42.00 to	\$43.00
2x4 in. to 2x12 in., 16 ft. and 10 ft.	43.00 to	44.00
2x4 in. to 2x12 in., 18 ft.	46.00 to	47.00
1 in. hemlock, No. 1, 6 in. wide	43.00	
1x8 in. and 1x10 in., 10 ft. to 16 ft.	44.00	
No. 1 hemlock decking, T & G	44.00 to	45.00
No. 2 hemlock dimensions and 1 in.	35.00 to	38.00
Pine—		
1 in. common and better pine 8 to 12 in. wide, rough	55.00 to	75.00
2x4 in. to 2x12 in., pine common	52.00 to	65.00
7/8x8 and 10 in., pine shelving	74.00 to	79.00
7/8x12 pine shelving	84.00	
White pine flooring	57.00 to	64.00
Spruce flooring		54.00
Pine decking, D2S		62.00
Spruce decking		56.00
No. 1 pine V or beaded sheeting	66.00 to	68.00
No. 2 pine V or beaded sheeting	56.00 to	58.00
No. 1 Common long leaf yellow pine—		
2x4 in. to 2x12 in., 10 to 16 ft.	52.00 to	65.00
2x4 in. to 2x12 in., 18 to 20 ft.	56.00 to	70.00
2x4 in. to 2x12 in., 22 to 24 ft.	56.00 to	75.00
Yellow pine finish		
4/4 x 6, 8, 10 and 12 B. & B. smoke dried	70.00 to	80.00

5/4 x 6, 8, 10 and 12 B. & B. smoke dried	75.00 to	85.00
6/4 x 6, 8, 10 and 12 B. & B. smoke dried	75.00 to	85.00
7/4 x 6, 8, 10 and 12 B. & B. smoke dried	75.00 to	85.00
4/4 x 6, 8, 10 and 12 B. & B. steam dried	70.00 to	80.00
5/4 x 6, 8, 10 and 12 B. & B. steam dried	75.00 to	85.00
6/4 x 6, 8, 10 and 12 B. & B. steam dried	75.00 to	85.00
8/4 x 6, 8, 10 and 12 B. & B. steam dried	75.00 to	85.00
Pine trim for paint finish—		
4 in. casing, per 100 ft.	3.00 to	3.50
5 in. casing, per 100 ft.	3.50 to	4.00
8 in. pine base, per 100 ft.	5.25 to	6.50
10 in. pine base, per 100 ft.	7.00 to	8.50
4 in. pine window stool, per 100 ft.	4.50 to	5.00
Hardwood trim, flooring, etc.—		
Quotations will be given on request. See editor's note above.		
Shingles, lath, roofing, etc.—		
XXX B. C. cedar shingles, per M.	5.50	
N. B. extras	5.50	
No. 1 pine lath, per M.	7.00	
No. 2 pine lath	6.50	
No. 1 spruce lath	6.00	
Roofing:		
1 ply, per sq. ft.	1.40 to	2.00
2 ply, per sq. ft.	1.85 to	2.60
3 ply, per sq. ft.	2.25 to	3.20
Cedar posts—fence—(8 ft.)		
5 in. at small end, each	.40	
6 in. at small end, each	.40	
7 in. at small end, each	.60	
Hardware—		
Nails, wire, common, cwt.	5.45	
Nails, cut, common	5.80	
Sash weights, cast iron (solid)	3.00	
Sash cord, No. 8 and up, lb.	.70	
Tarred paper, roll	.75 to	1.30
Building paper, plain	1.20	
Glass—(Ontario and Quebec prices.)		
United inches		
Up 25 (per 100 ft. box)	\$16.80	\$22.90
26-34	17.60	24.85
35-40	18.35	26.40
41-50	23.50	30.00
51-60	24.60	30.80
61-70	26.50	32.70
71-80	29.70	35.40
81-84		45.45
85-90		48.85
91-94		49.80
95-100		58.55
101-105		65.35
106-110		73.10
Wired glass, per sq. ft.		
Brick, tile, terra cotta, sewer pipe—		
No. 1 dry pressed red bricks	\$18.00 to	\$20.00
No. 1 dry pressed buff bricks	18.00 to	20.00
Red stock bricks	14.00 to	16.00
Sand lime bricks	9.00 to	10.50
Grey stock bricks	13.00 to	15.00
Sewer bricks	12.50	
Wire cut brick for foundation work		
Porous terra cotta bricks	12.50 to	14.00
No. 1 enameled bricks, all colors, standard, from	80.00 to	115.00
Enameled bricks (shapes)	100.00 to	200.00
Brick salt glazed, carload lots floor and wall, standard, per M.	30.00 to	50.00
Shapes	50.00 to	150.00
Fire brick		85.00
Fire clay, per ton	18.00	
Rough texture brick	20.00 to	35.00
Sewer pipe, 4 inch, per ft.	.15	
Sewer pipe, 6 inch, per ft.	.22½	
Verandah post caps, 18 in. each	1.45	
Verandah post caps, 20 in. each	1.75	
Chimney caps, 1 flue in 1 piece, each	2.00	
Chimney caps, 2 flues in 2 pieces, each	8.50	
Chimney caps, 3 flues in 3 pieces, each (Excelsior)	6.00	
Cement, plaster, stone, etc.—		
Cement (bags extra) (5 bbl. lots)	3.35	
Sand, for cement or brick work, per ton		
Lime, ton, gray	13.00	
Lime (ton) white	14.00	
Hydrated lime (Canadian), per ton	17.95	
Mortar color:		
Black, cwt.	7.75	

Red, cwt.	2.50
Plaster of paris	3.25
Crushed stone, 2 in.	1.80
Crushed stone, 1 in.	2.00
Crushed stone, 3/8 in.	2.00
Hardwall plaster, per ton	14.00
Sanded	8.00
Gravel, per ton	1.10 to 1.50
Hair (plaster), per lb.	.15

WINNIPEG PRICES

Corrected to August 12, 1918, by the Building Material Dealers Association, of Greater Winnipeg, 305 Scott Block, Winnipeg.

Terms—All goods are payable on delivery of same. Without waiving or modifying this term, accounts may be rendered monthly on the first of each month.

Discount—Unless otherwise specified, the prices noted herein are subject to a discount of 5 per cent., in respect of all goods paid for, on or before the 15th day of the month following the month in which same are delivered, and time is the essence of this provision.

Interest—Interest at 8 per cent. per annum will be charged on the price of all goods from the last day of the month following the month in which same are delivered.

Delivery—All quotations are based on curb delivery only. If carried over 20 feet, there will be a minimum charge of 50c per ton.

Sand, gravel and torpedo sand— Per yard
Delivered \$3.10
F.O.B. yard 2.10
Carload 1.85

Crushed stone, crushed and screened gravel, 1½ in. to 2 in.—

Delivered 3.65
F.O.B. cars, city 2.90

Crushed stone, crushed and screened gravel, 3/4 in. to 1 in.—

Delivered 3.95
F.O.B. yard and F.O.B. cars, city 3.25
Stone dust—

Delivered 3.85
F.O.B. yard and F.O.B. cars, city 2.65

Roofing gravel—
Delivered in city or F.O.B. cars, per yd. 4.50
Note—All material quoted above is delivered in 2 yd. loads; for delivery of less than 2 yd. loads add 50c net extra per load.

Rubble stone, Per cord \$14.00
F.O.B. yard and F.O.B. cars, city 8.00

Lime in bulk—White lime, grey lime, Moschorn and Bowman lime—

Lime in bags 2c per bush. over bulk price.
Delivered Per bush. \$.50
F.O.B. yard 47
F.O.B. cars at kiln 35

*Note—All above delivered prices are for loads containing 40 bushels or more; for less than 40 bushels delivered add 50c net per load.

Lime is sold by measure only.
Lime in barrels (including barrels)—

Diamond and Star Brands. Per bbl.
Delivered 3.10
F.O.B. yard 3.00
F.O.B. cars, city in car lots 2.65

Moschorn and Bowman Brands—
Delivered 3.10
F.O.B. yard 3.00
F.O.B. cars, city in car lots 2.65

Kelly Island Brand—
Delivered 2.35
F.O.B. yard 2.25

Above delivered prices are based on load lots.
Note—A barrel of lime weighs 200 lbs. gross, or about 180 lbs. of lime.

Hydrated lime in paper bags (50 lbs.)—
Bags included in price, but not returnable.
Delivered Per ton \$20.50
F.O.B. yard 19.50
F.O.B. cars, city 18.35

Hydrated lime in cotton bags—(100 lbs.), bags, 30c allowed when returned. Per ton
Delivered \$28.00
F.O.B. yard \$26.50
F.O.B. cars, city 25.00

Sacks returnable 30c each.
Portland cement in bags— Per bag
Delivered \$1.20
F.O.B. yard 1.17
F.O.B. cars, city 1.05

Carloads on track direct on job, \$4.00 bbl.
Note—Four sacks make a barrel, 350 lbs.

Mortar cement in bags— Per bag
Delivered \$.74
F.O.B. yard 72
F.O.B. cars, city 64

Note—1 sack mortar cement weighs 70 lbs.
Delivered in ton lots; less than ton lots 50c extra.

Best Bros. Acme and No. 1 Keenes cement in bags—			Per bag
Delivered			\$2.50
F.O.B. yard or cars, city			2.25
Empire Keenes cement in 100 lb. bags—			
Delivered			\$2.25
F.O.B. yard or cars, city			2.10
Note—a sack contains 100 lbs. gross.			
Fine Keenes cement in bags—			
(3 sacks per bbl.)		Per bbl.	
Delivered			\$13.10
F.O.B. yard or cars, city			12.25
Superfine Keenes cement in bags—			
(3 sacks per bbl.)		Per bbl.	
Delivered			15.50
F.O.B. yard or cars, city			14.70
Gypsum—			Per ton
Delivered			\$17.00
F.O.B. yard			16.00
F.O.B. cars, city			15.00
Hardwall plaster Nos. 1 and 2, wood fibre plaster, ivory finish, gold dust finish—			Per ton
Paper bags Jute bags			
Delivered	\$19.00	\$22.00	
F.O.B. yard	18.00	21.00	
F.O.B. cars, city	17.00	20.00	
Empire finish plaster, Peerless prepared finish, Sinite finish plaster in bags—			
Delivered	\$23.00	\$26.00	
F.O.B. yard	22.00	25.00	
F.O.B. cars, city	21.00	24.00	
Plaster of paris and Stucco—			
Delivered	22.00	25.00	
F.O.B. yard	21.00	24.00	
F.O.B. cars, city	20.00	23.00	
After August 1, deliveries will be in paper bags, except for contracts existing previous to July 19.			
Note—20 sacks make 1 ton gross.			
Delivered in ton lots; less than ton lots 50c extra.			
Plaster of paris in barrels—			
(Price includes barrels.)			Per bbl.
Hammer Brand, 320 lbs. gross			\$5.00
Empire and Peerless, 250 lbs. gross			3.70
Plasterers' hair—			
Per bale			\$3.30
Per bush.			.90
Mortar color—			Per 100 lbs.
Red			\$6.00
Black			7.50
Buff			7.00
Chocolate			8.00

Drain tile—		
3 in. delivered or at yard, each		\$.07
4 in. delivered or at yard, each		.09
Each tile is one foot long.		
Wood lath—		
No. 1, delivered, per M.		\$6.50
No. 2, delivered, per M.		5.50
Gypso fibre—		Per M. ft.
5/16 in. x 32 x 36 x 48 and 60—		
Delivered		\$33.70
F.O.B. yard		29.30
F.O.B. cars, city		28.00
3/4 in. x 32 x 36 and 48 and 60—		
Delivered		36.30
F.O.B. yard		32.70
F.O.B. cars, city		30.80
1/2 in. x 32 x 36 and 48 and 60—		
Delivered		41.50
F.O.B. yard		37.00
F.O.B. cars, city		35.00
Note—If delivered in more than 2,000 feet lots, \$2.00 per M. less.		
Plaster blocks—		Per 100 sq. ft.
3 in. hollow tile—		
Delivered or F.O.B. yard		\$12.10
F.O.B. cars, city		9.80
4 in. hollow tile—		
Delivered or F.O.B. yard		13.10
F.O.B. cars, city		10.80
6 in. hollow tile—		
Prices on application—		
2 in. furring tile—		
Delivered or F.O.B. yard		10.10
F.O.B. cars, city		7.80
2 in. solid tile—		
Delivered or F.O.B. yard		12.10
F.O.B. cars, city		9.80
Terra Cotta tile prices on application.		
Fire clay—		
Delivered or F.O.B. yard, per 100 lbs.		1.25
Per ton		25.00
Firebrick (Canada)—		Per M.
Delivered		\$75.00
F.O.B. yard		72.50
F.O.B. cars		70.00
In quantities less than 1M, 8c each.		
Fire brick—(American)		Per M.
Delivered		\$95.00
F.O.B. yard		92.50
F.O.B. cars, city		87.50
Less than M. delivered, per 100		10.00
Special prices on fire blocks and specials on application.		Per M.
Common clay brick		15.00
Chimney and select brick		15.00
Veneer brick		18.00
Sandlime brick		14.50

WINNIPEG GLASS DEALERS' ASSOCIATION

Prices of window glass sheet boxes.
Effective April 24th, 1918.

United Inches	16 oz. Single or Star	21 oz. or Double Diamond
10 - 25	\$13.50	\$18.50
26 - 40	14.50	21.00
41 - 50	18.50	23.75
51 - 60	19.50	24.25
61 - 70	20.50	25.75
71 - 80		27.75
81 - 84		34.75
86 - 90		37.00
91 - 94		37.75
96 - 100		44.25
101 - 105		49.00
106 - 110		54.75
100 ft. Cases of one Size of Even Inch Glass		
26 oz.	32 oz.	
Up to 100 in...	.47	Up to 100 in... .60
Over 100 in...	.55	Over 100 in... .67
Saskatoon and Swift Current		
16oz. Winnipeg prices plus 80c freight per case.		
21oz. Winnipeg prices plus \$1.10 freight per case		
Calgary and Edmonton		
16oz. Winnipeg prices plus \$1.05 freight per case		
21oz. Winnipeg prices plus \$1.50 freight per case		

PRICES AT VANCOUVER

Shingles, lath, etc.—	
XXX B. C. cedar shingles, per	
M.	\$3.00
Lath, per M.	\$2.50 to 4.00
Brick, tile, terra cotta, sewer pipe—	
No. 1 dry pressed red bricks,	
per M.	\$33.00 to 45.00
No. 1 dry pressed buff bricks,	
per M.	40.00 to 45.00
Red stock bricks	14.50 to 16.00
Fire brick	45.00 to 50.00
Fireclay, per ton (car lots)	16.00
Sewer pipe, inch, per ft.	.15
6 in., per ft.	.25
8 in., per ft.	.35
10 in., per ft.	.45
12 in., per ft.	.55
Cement plaster, stone, etc.—	
Cement, Portland (bags extra),	
per bbl.	\$ 2.80
Keenes cement, per bbl. (sacks extra)	
	9.00
Hydrated lime, per ton	
	16.00
Lime, per bbl. 200 lbs.	
	1.90
Alca lime, per ton	
	16.00
Plaster of paris, per bbl.	
	4.50
Hardwall plaster, per ton (car lots, bags extra)	
	16.50

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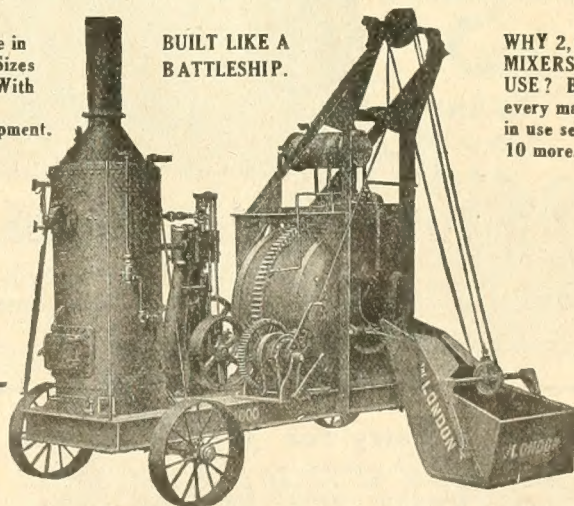
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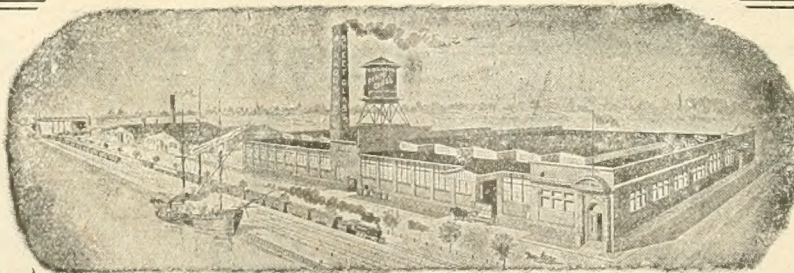
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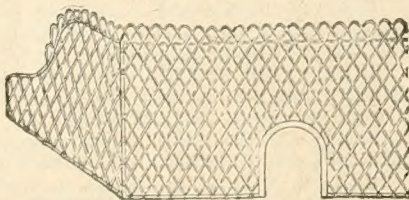
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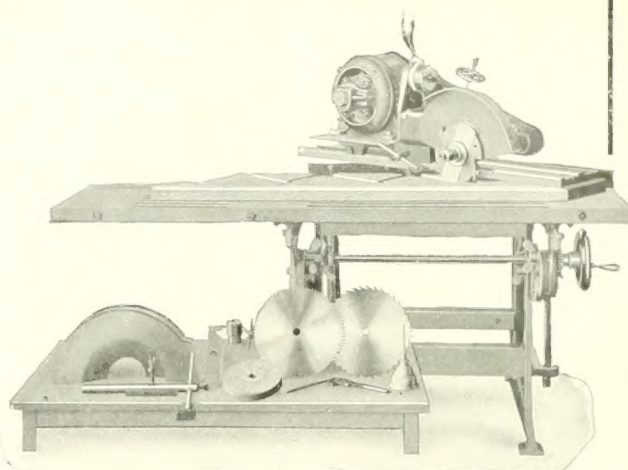
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The United States Government already have Elliot Woodworkers at Norfolk, Brooklyn, Newport News Navy Yards and the West Point Military Academy.

250 of these machine have been sold in Toronto, and the same number in Detroit alone.

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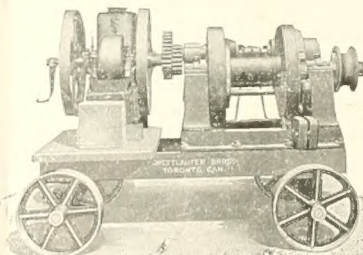
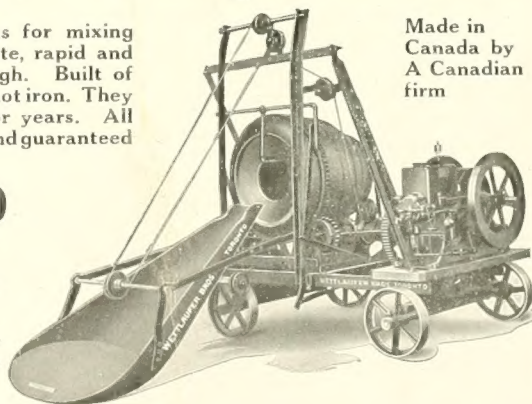
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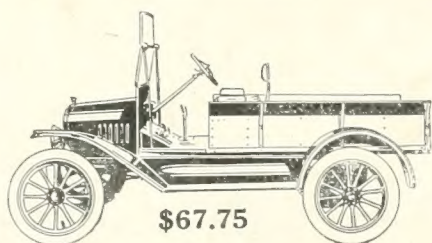
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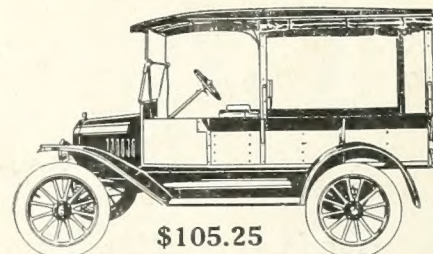
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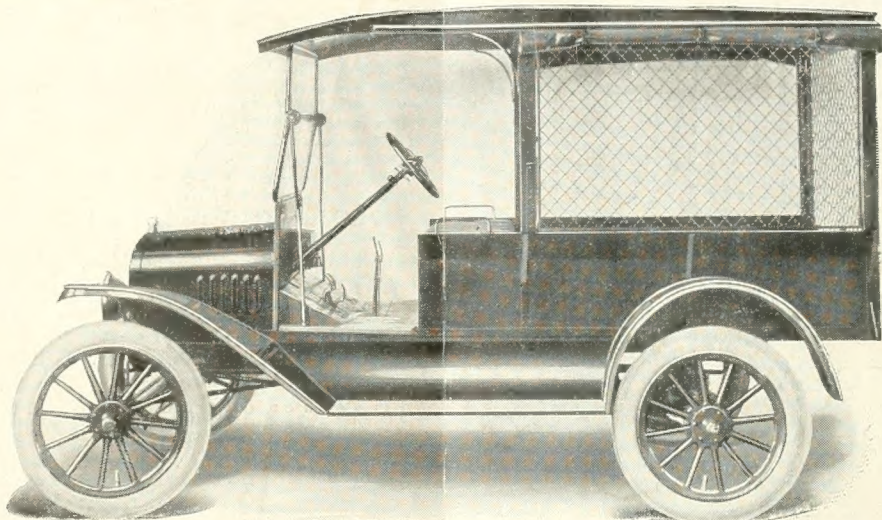
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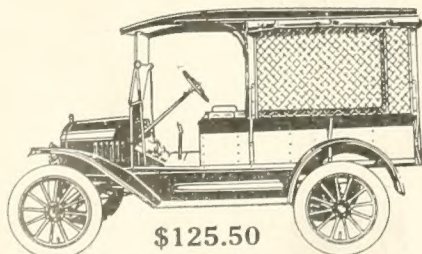
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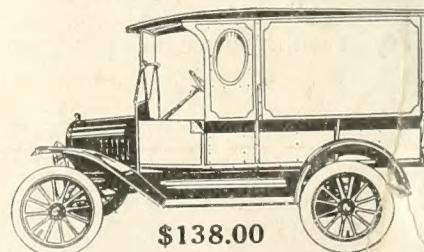
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